Obesity in America:
Environment Matters, Design Matters

J. Michael McGinnis, MD, MPP

The Robert Wood Johnson Foundation

3 Points

- **Active living shapes health prospects**
- **Design of the built environment is key to active living**
- **Active Living by Design is an important RWJF priority**

Active Living and Health

Inactive Living and Health

- Heart disease
- Stroke
- Diabetes
- Overweight and obesity
- Osteoarthritis
- Falls among elderly
- Depression, anxiousness
- Certain cancers

Inactive Living and Health

Actual Causes Of Death, 1990

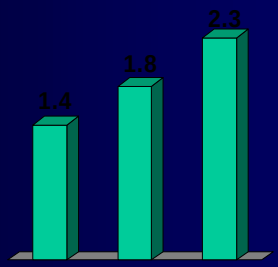
Tobacco	400,000
Diet/activity patterns	300,000
Alcohol	100,000
Microbial agents	90,000
Toxic agents	60,000
Firearms	35,000
Sexual behavior	30,000
Motor vehicles	25,000
Illicit Drug use	20,000

Inactive Living and Health

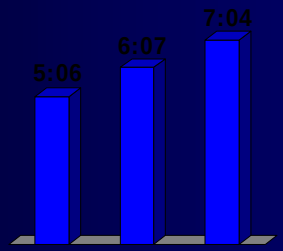
Cause	1990	2000
Diet/activity patterns	450,000	500,000
Tobacco	375,000	375,000
Alcohol	90,000	80,000
Microbial agents	90,000	80,000
Medical errors		70,000
Toxic agents	60,000	60,000
Firearms	35,000	30,000
Motor vehicles	25,000	25,000
Sexual behavior	30,000	20,000
Illicit use of drugs	20,000	15,000

Emergence of an Inactive Society

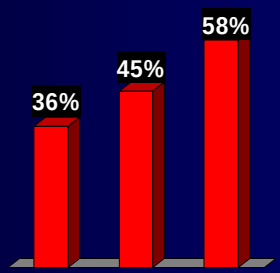
Millions of Person-Miles in Automobiles, 1970-1990



Hours of TV Viewed Daily 1960-1992



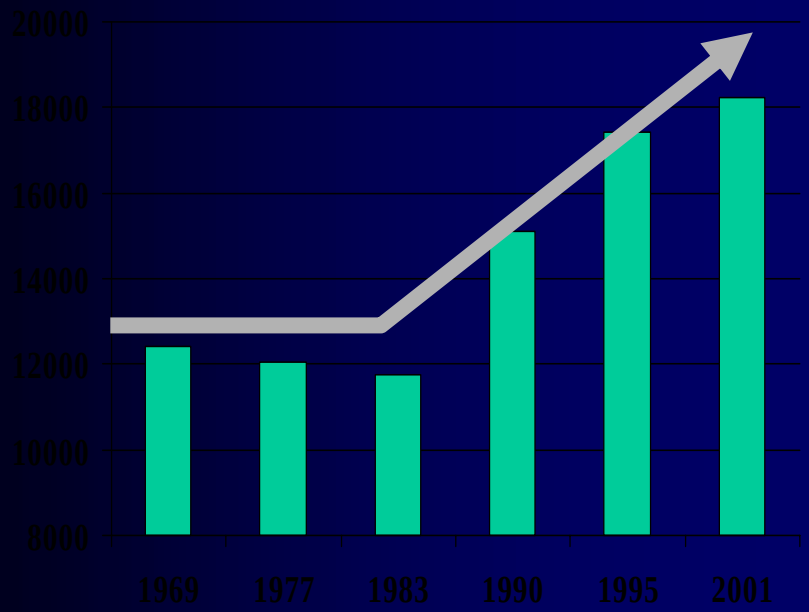
Percent of Workforce in Sedentary Occupations 1950-1996



- Cars used for 80% of trips <1 mile
- Only 10% of children walk to school (v. 80% for their parents)
- Suburbs that are pedestrian-unfriendly
- Television and computers
- More sedentary jobs and recreation

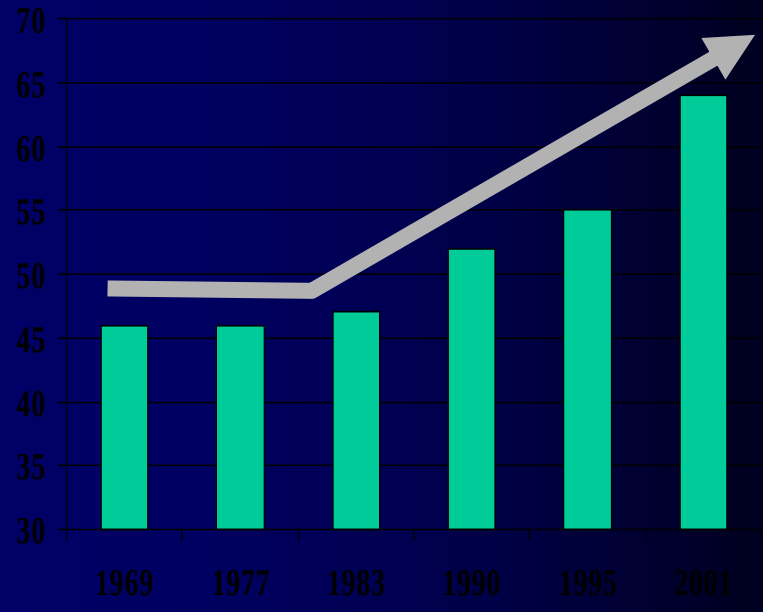
Growth in VMT / Growth in Overweight

1969-2001



Growth trend for annual household vehicle miles of travel

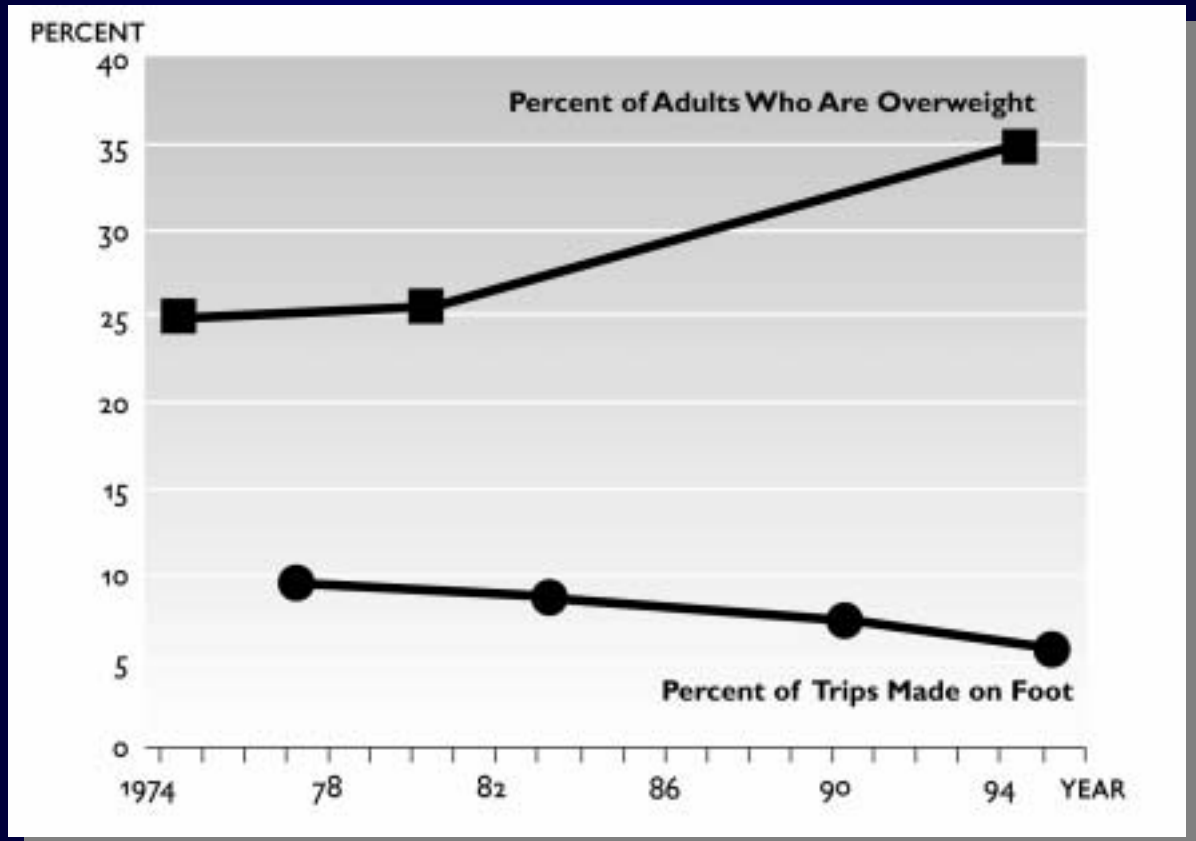
(50% overall growth)



Growth trend for percent of Americans ‘overweight’

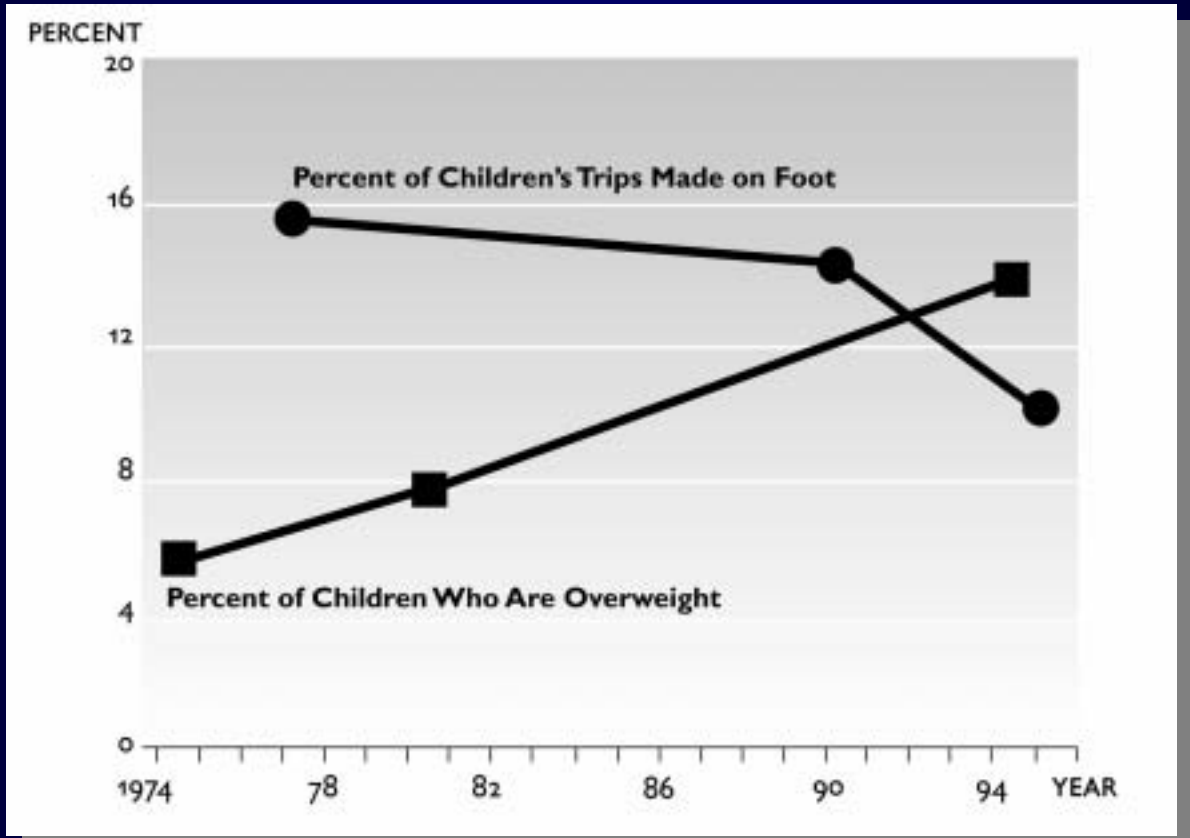
(40% overall growth)

Walking Falls and Weight Climbs
1974-1996



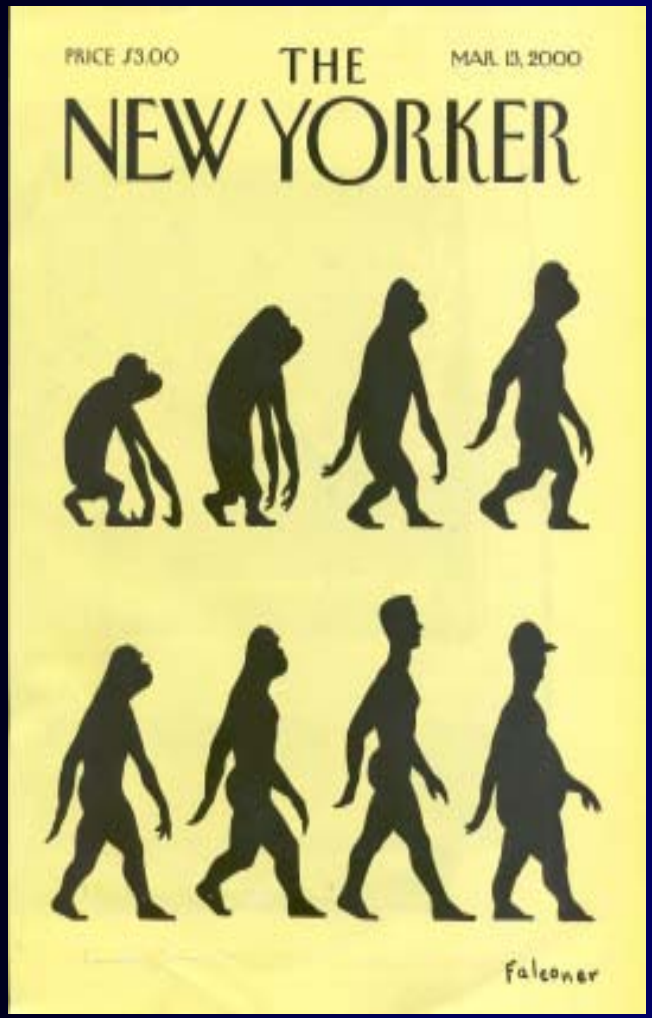
Based on data from the Nationwide Personal Transportation Survey and the Centers for Disease Control and Prevention.

Children Ride, Their Weight Rises
1974-1996



Based on data from the Nationwide Personal Transportation Survey and the Centers for Disease Control and Prevention.

Explaining the Epidemic

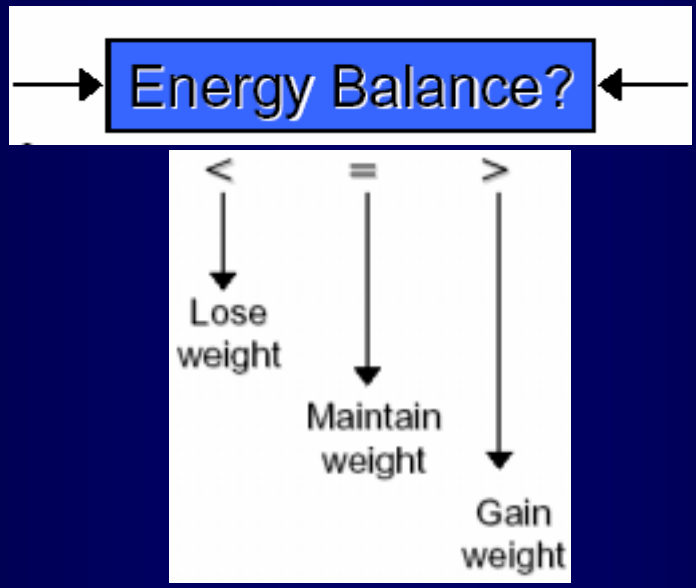


- Not genetic or biological changes
- But sweeping societal and environmental changes -- we live in environments that are simply calorie promoting and activity discouraging

Environment and Energy Balance…

Food Environment

- **Availability**
- **Pricing**
- **Marketing**
- **Portion sizes**



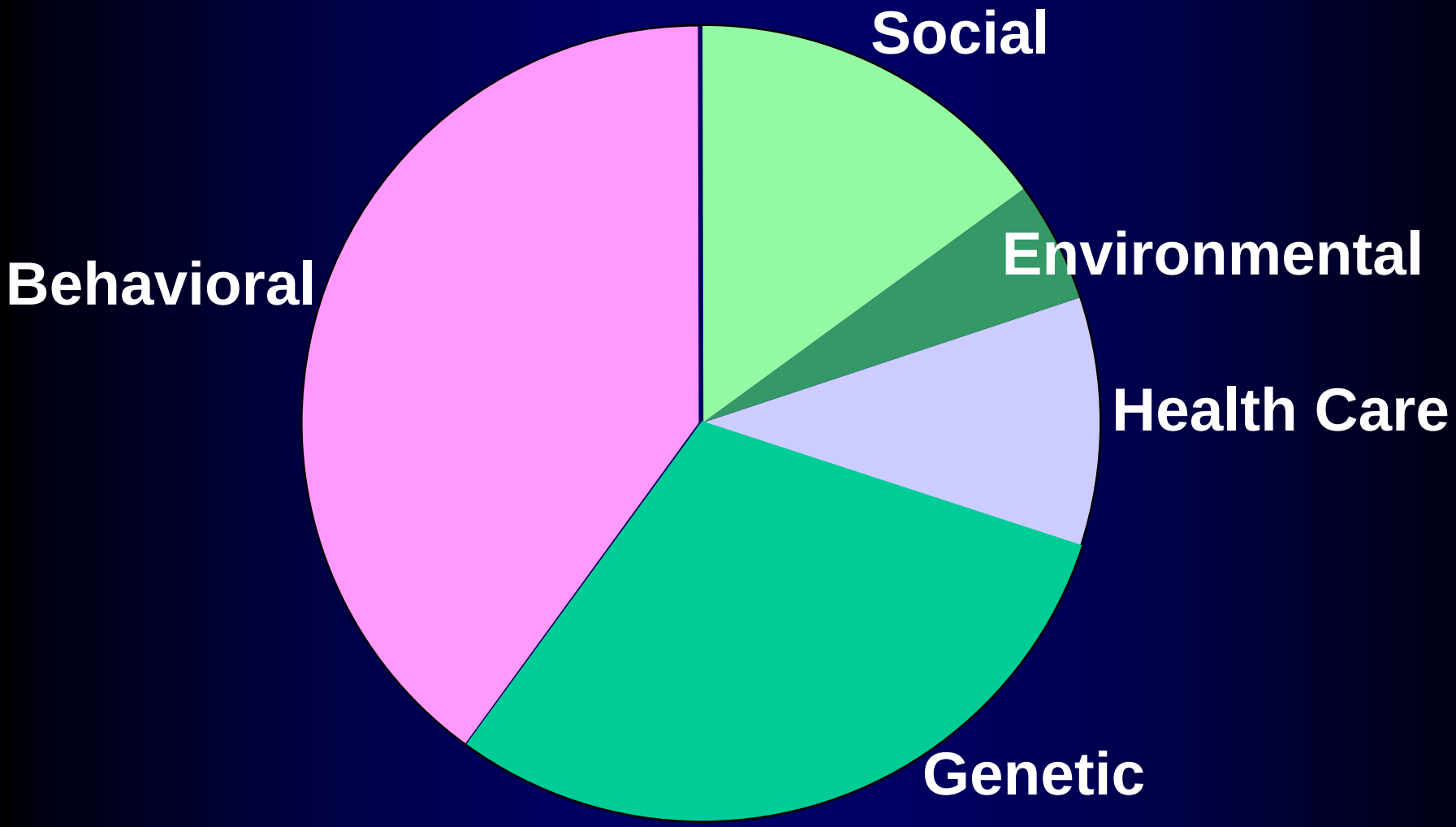
Built Environment

- **Sidewalks**
- **Bike paths**
- **Stairwells**
- **Neighborhood layout**

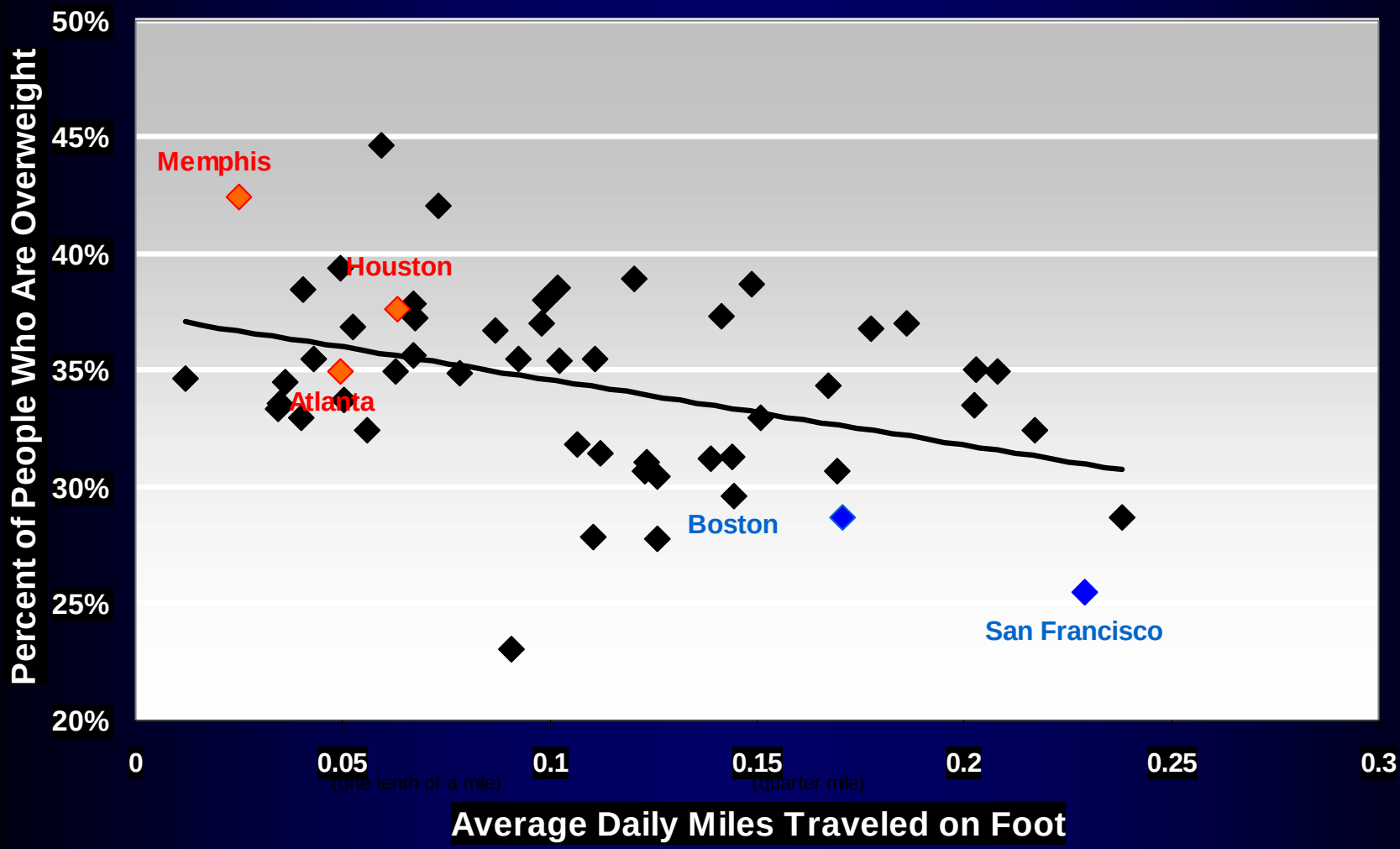
Facilities

Design and Active Living

Determinants of Health



Weight and Urban Travel Patterns



STPP, Mean Streets, 2000

THE NATION'S NEWSPAPER

USA TODAY

NO. 1 IN THE USA

April 22, 2003

The way cities and suburbs are developed could be bad for your health

By Martha T. Moore
USA TODAY

Why don't Americans walk anywhere?

Old answer: They're lazy.

New answer: They can't.

There is no sidewalk outside the front door; school is 5 miles away, and there's a six-lane highway between home and the supermarket.

Many experts on public health say the way neighborhoods are built is to blame for Americans' physical inactivity — and the resulting epidemic of obesity.

The health concern is a new slant on the issue of suburban sprawl, which metro regions have been struggling with for a decade. These health experts bring the deep-pocketed force of private foundations and public agencies into discussions about what neighborhoods should look like.

The argument over whether suburbs are bad for your health will hit many Americans precisely where they live: in a house with a big lawn on a cul-de-sac.

Cover story

"The potential for actually tackling some of these things, with the savvy of the folks who have tackled tobacco, is enormous," says Ellen Vanderslice, head of America Walks, a pedestrian advocacy group based in Portland, Ore.

A study by the federal Centers for Disease Control and Prevention is tracking 8,000 residents of Atlanta to determine whether the neighborhood they live in influences their level of physical exercise. The Robert Wood Johnson Foundation in New Jersey,

Please see COVER STORY next page ►

The Washington Post

Friday, August 29, 2003

Suburbia USA: Fat of the Land?

Report Links Sprawl, Weight Gain

By Rob Stein
Washington Post Staff Writer

Suburban sprawl appears to be contributing to the nation's obesity epidemic, making people less likely to walk and more likely to be overweight, researchers reported yesterday.

In the first comprehensive examination of whether suburbs spreading across the U.S. landscape are affecting Americans' health, the researchers studied more than 200,000 people in 448 counties, producing the first concrete evidence supporting suspicions that sprawl is aggravating the nation's growing weight crisis.

People who live in the most spread-out areas spend fewer minutes each month walking and weigh about six pounds more on average than those who live in the most densely populated places. Probably as a result, they are almost as prone to high blood pressure as cigarette smokers, the researchers found.

"There are lots of other reasons why we should work to contain sprawl," said Reid Ewing of the University of Maryland's National Center for Smart Growth, who led the

dence and no national data. The new findings are likely to be used by advocates of tightly controlled growth around the country, including locally.

"There is a lot of circumstantial evidence that sprawl is related to health," Ewing said in a telephone interview. "This is certainly the first national study to make the direct connection between the built environment and health."

Ewing and his colleagues analyzed data collected about 206,992 U.S. adults between 1996 and 2000 by the Behavioral Risk Factor Surveillance System, an ongoing federal survey. Using data from the Census Bureau and other federal sources about population density, block size, street patterns and other factors, the researchers calculated a "sprawl index" for 448 counties in the largest metropolitan areas nationwide, where two-thirds of the population reside, including the Washington region.

The index ranged from a low of 63 for the most sprawling county—Geauga, Ohio, just outside Cleveland—to a high of 352 for the densest—New York City.

Frederick County in Maryland,

People who live in the most spread-out areas were found to weigh about six pounds more on average than those in the most densely populated p

25 densest counties.

People in more sprawling counties are also likely to have a higher body mass index (BMI), a standard measure of weight. A 50-point increase in the degree of sprawl was associated with an average weight gain of a little more than one pound per person, researchers found.

While researchers found no association between sprawl and diabetes or heart disease, they did find that people who live in the least sprawling areas had a 29 percent lower risk of developing high blood pressure than those in the most sprawling areas.

Sprawl and Obesity

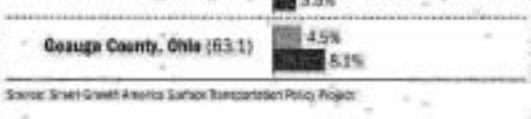
New research links suburban sprawl to obesity. You are more likely to be overweigh live in an area with low population density and a more expansive street grid.

State/County	The lower the sprawl index score, the greater the amount of sprawl.	More sprawl means you are more likely to have a higher body mass index, ...	... the more pounds you are likely to weigh, ...	... the higher your risk of high blood pressure ...	... high risk
	SPRAWL INDEX SCORE	CHANGE IN BMI*	CHANGED WEIGHT**	PERCENT DIFFERENCE FROM AVERAGE RISK	
Maryland					
Anne Arundel	107.75	26.07	166.47	-0.92%	
Calvert	90.84	26.13	166.84	1.10	
Cecil	89.72	26.14	166.87		

tional Center for Smart Growth at the University of Maryland.

The study also looked at heart disease and diabetes, but didn't find any statistically relevant relationship between sprawl and these diseases.

The study did find that the



Source: Smart Growth America, Surface Transportation Policy Project

discourage walking). Statistics on weight, obesity, hypertension and other health factors were gleaned from a continuing phone survey of more than 200,000 adults by the CDC.

The study found that for ev-

Mounting Evidence that the Built Environment Impacts Activity Levels

Design Variable	Activity Outcome
Mixed land use	19% ↑ in walk/bike trips
Proximity of services	27% ↑ in walk/bike trips
Perceived traffic safety	88% ↑ in walk/bike trips
Perceived aesthetics	50% ↑ in walk/bike trips
Development of bikeway	57% ↑ in bicycling

Neighborhoods Design and Walking

Traditional urban settings can generate half the automobile trips of similarly sized modern day suburbs.

Sources: Ewing and Cervero, 2001; Frank et al., 2001; Cervero and Radisch, 1996; Handy1996; Rutherford, 1996; Criterion Planners Engineers, 2000

Sidewalks and Quality of Life

"Lowly, unpurposeful and mundane as they appear, sidewalk contacts are the small change from which a city's wealth of public life may grow."

Jane Jacobs, The Death & Life of Great

One Study: 50 million viewers

Academic paper

THE SCIENCE OF HEALTH PROMOTION

Building the Evidence—U.S. Approaches

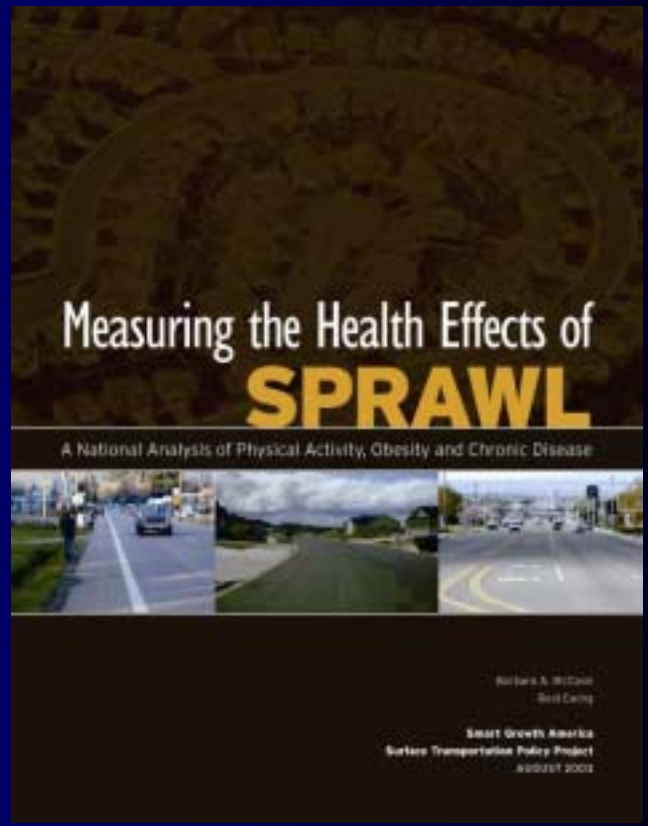
Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity

Reid Ewing, Tom Schmid, Richard Killingsworth, Amy Zlot, Stephen Raudenbush

Abstract

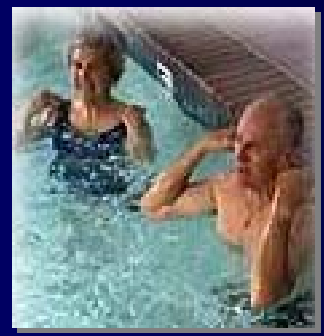
INTRODUCTION

Popular report



Physical activities in or near buildings

- Walking
- Biking
- Stair climbing
- Running
- Use of indoor exercise facilities on/off site
- Use of outdoor facilities on/off site
- Occupational/ household activities



Activity-Friendly Buildings:

Which aspects of design matter?

- Destination points (food service, copy and conference rooms)
- Building layout and way finding
- Fitness centers and corporate culture

Designing Activity-Friendly Buildings

Adding Steps for Better Health

Source: Kerr, Nicole Angelique MPH, Centers for Disease Control Stairwell Project slide set

Source: Jim Sallis Ph.D., San Diego State University

Great stairways

Park Guell, Barcelona

Great stairways

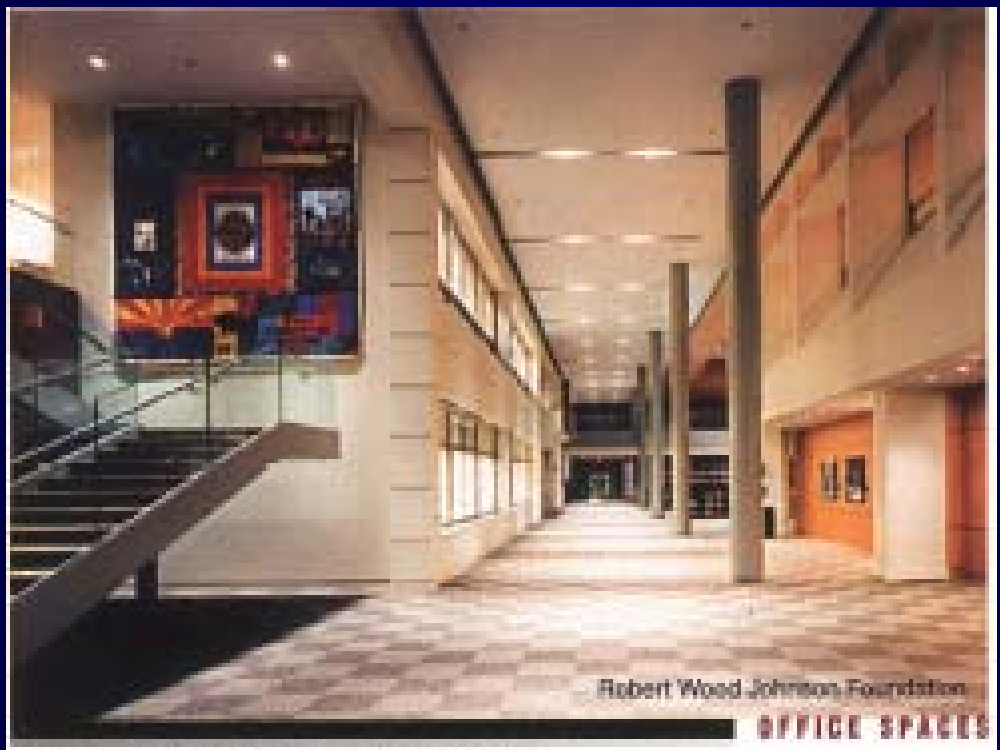
The Louvre

Great stairways

“Living Buildings”

Adidas Village, Portland, Oregon

- Site selection
- Site layout
- Design features
- Foot pattern flow
- Stair incentives
- Communication



OFFICE SPACES

HEALTHY ARCHITECTURE

The DNA of the built environment --effects of codes and zoning

TRANSPORTATION SUMMIT, PAGE 20 / MARKETS FOR SMART GROWTH, PAGE 10

NEW URBAN NEWS

COVERING DESIGN & DEVELOPMENT OF HUMAN-SCALE NEIGHBORHOODS

VOLUME 8 • NUMBER 1 JANUARY/FEBRUARY 2003

Zoning reform advances against sprawl and inertia

Congress for the New Urbanism (CNU), Local Government Commission, and others are pushing form-based, mixed-use codes.

PHILIP LANGDON

An overhaul of zoning codes is shaping up as one of this year's chief new urbanist goals.

Both CNU and the Sacramento-based Local Government Commission are compiling surveys of anti-sprawl zoning codes that have been enacted by cities and counties throughout the US. At the same time, the Municipal Code Corporation (Municode) in Tallahassee is beginning to distribute the SmartCode developed by Duany Plater-Zyberk & Co. The big question is how many of America's thousands of local communities will go to the trouble of changing or discarding their existing zoning, which has the implicit backing of conventional real estate interests.

Albuquerque architect Bill Dennis says that at last June's CNU conference in Miami Beach "everyone felt the pressing issue was codes." With that in mind, Dennis organized the October Santa Fe Council session on codes, preparing the groundwork for intensive zoning reform work this year.

Conventional zoning is anathema to new urbanists and proponents of smart growth because it inflicts harm in seven ways, according to one of the Santa Fe Council's speakers, Paul Crawford of Crawford Multari & Clark Associates in San Luis Obispo, California. He identifies the detrimental results as:

CONTINUED ON PAGE 3

Growing focus on health should aid New Urbanism

Robert Wood Johnson Foundation is supporting a program to 'change the mindset of the whole country.'

The Robert Wood Johnson Foundation's campaign to reform Americans' unhealthy way of life is growing into an impressively well-financed effort — one that should help New Urbanism in at least two important ways.

The Princeton-based foundation in the past couple of years has made increased physical activity a key goal, supporting the endeavor with grants that may eventually total $70 million or more. That's roughly three times as much money as the foundation was known to be allocating to active living and community design programs

CONTINUED ON PAGE 8

RWJFActive Living Programs

RWJF Grantmaking Goals

- To assure access to basic health care
- To improve care for people with chronic health conditions
- To reduce the harm caused by substance abuse
- **To promote healthy lifestyles and communities**

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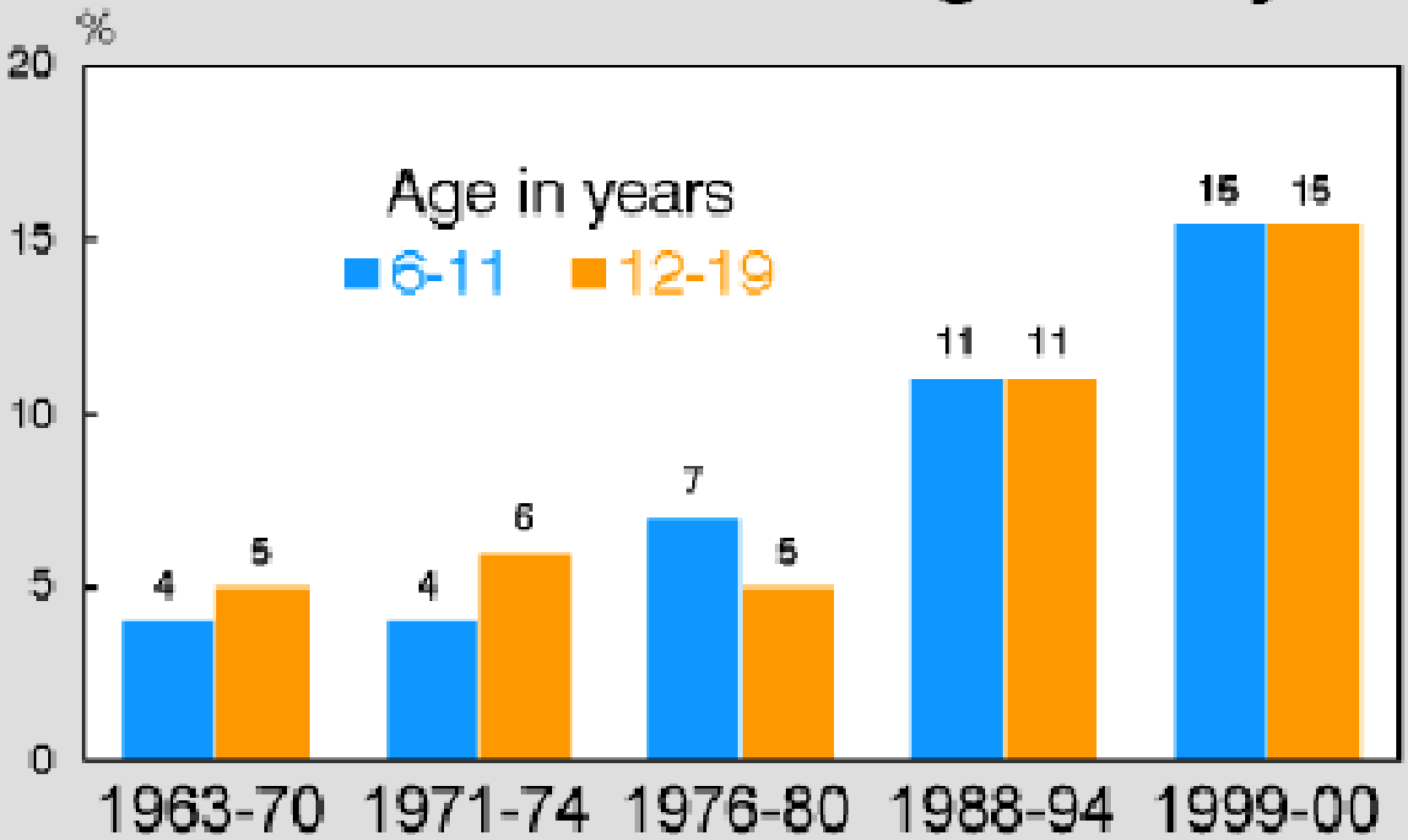
Figure 1. Prevalence of overweight among children and adolescents ages 6-19 years



NOTES: Excludes pregnant women starting with 1971-74. Pregnancy status not available for 1963-65 and 1966-70. Data for 1963-65 are for children 6-11 years of age; data for 1966-70 are for adolescents 12-17 years of age, not 12-19 years.
SOURCE: CDC/NCHS, NHES and NHANES.

We are raising the first generation of youth who may live sicker and die younger than their parents

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Active Living

Active Living is a way of life that integrates physical activity into daily routines with the goal of accumulating at least 30 minutes of activity each day.

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RWJF Active Living Programs

Designed to

- Develop the evidence base--environments and policies
- Demonstrate that communities can create supportive environments
- Create market interests and consumer demand

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Active Living Programs

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Action Strategies

- Support programming that promotes active living
- Foster collaboration and information sharing
- Support pedestrian-oriented transportation facilities and services
- Support active living land-use planning and development
- Encourage healthy school sites, facilities and policies
- Support recreational facilities, parks and trails
- Identify and create active living funding sources

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Social Change Model for Creating Activity-friendly Communities

Build the Evidence

Develop Models And Increasing Delivery Capacity

Create Demand

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Social Change Model for Creating Activity-friendly Communities

Building the Evidence

- Active Living Research
- Community Indicators
- Sprawl and Obesity
- Walk your Kids to School Evaluation
- Commuter Behavior and physical activity

Creating Models And Increasing Delivery Capacity

- Active Living by Design
- Active for Life

Creating Demand

- Active Living Network
- Active Living Leadership
- Bikable Awards
- Youth Health Fellows
- The Shape We're In
- America's Walking

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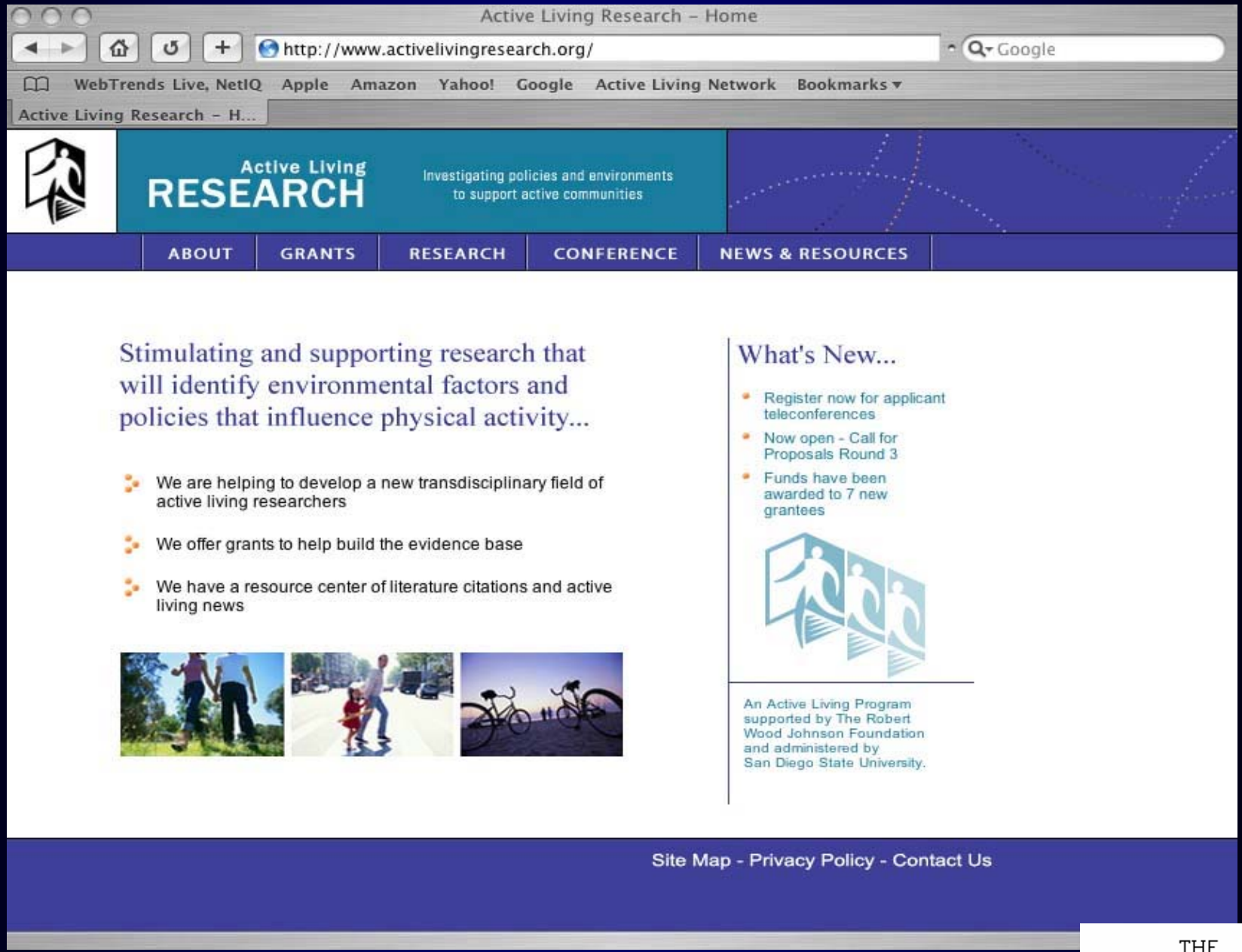

www.activelivingresearch.org

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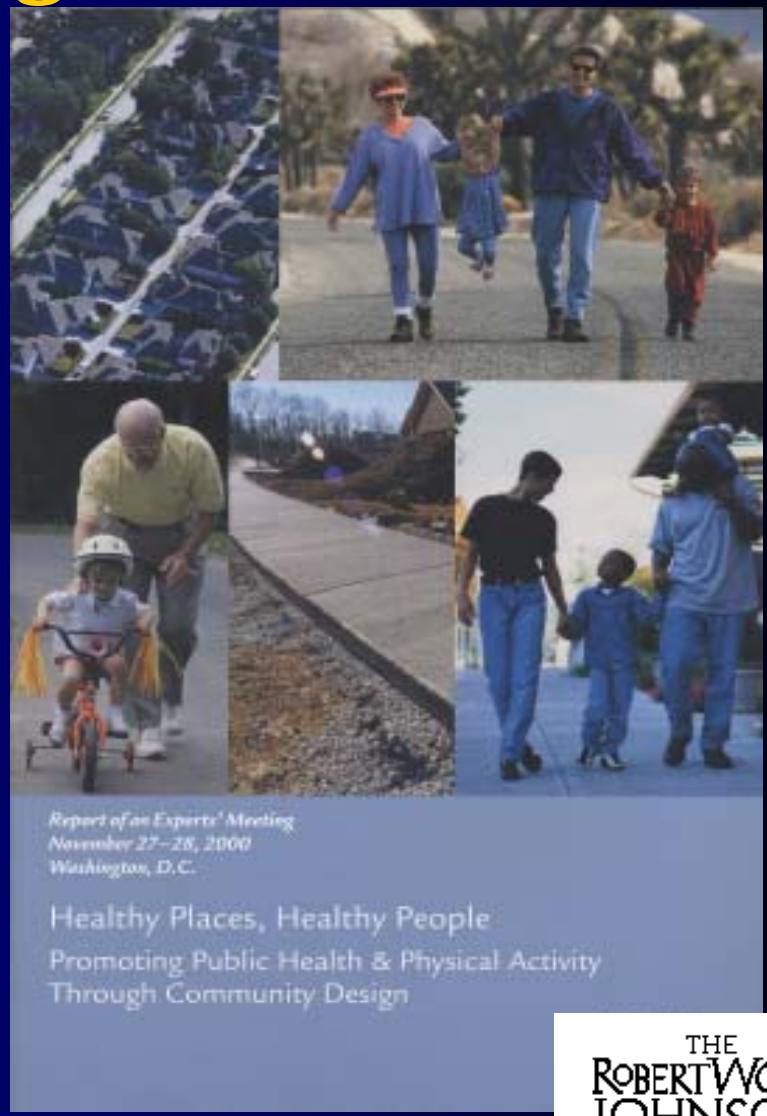
Active Living by Design

- Building partnerships
- Testing community approaches
- Developing learning network



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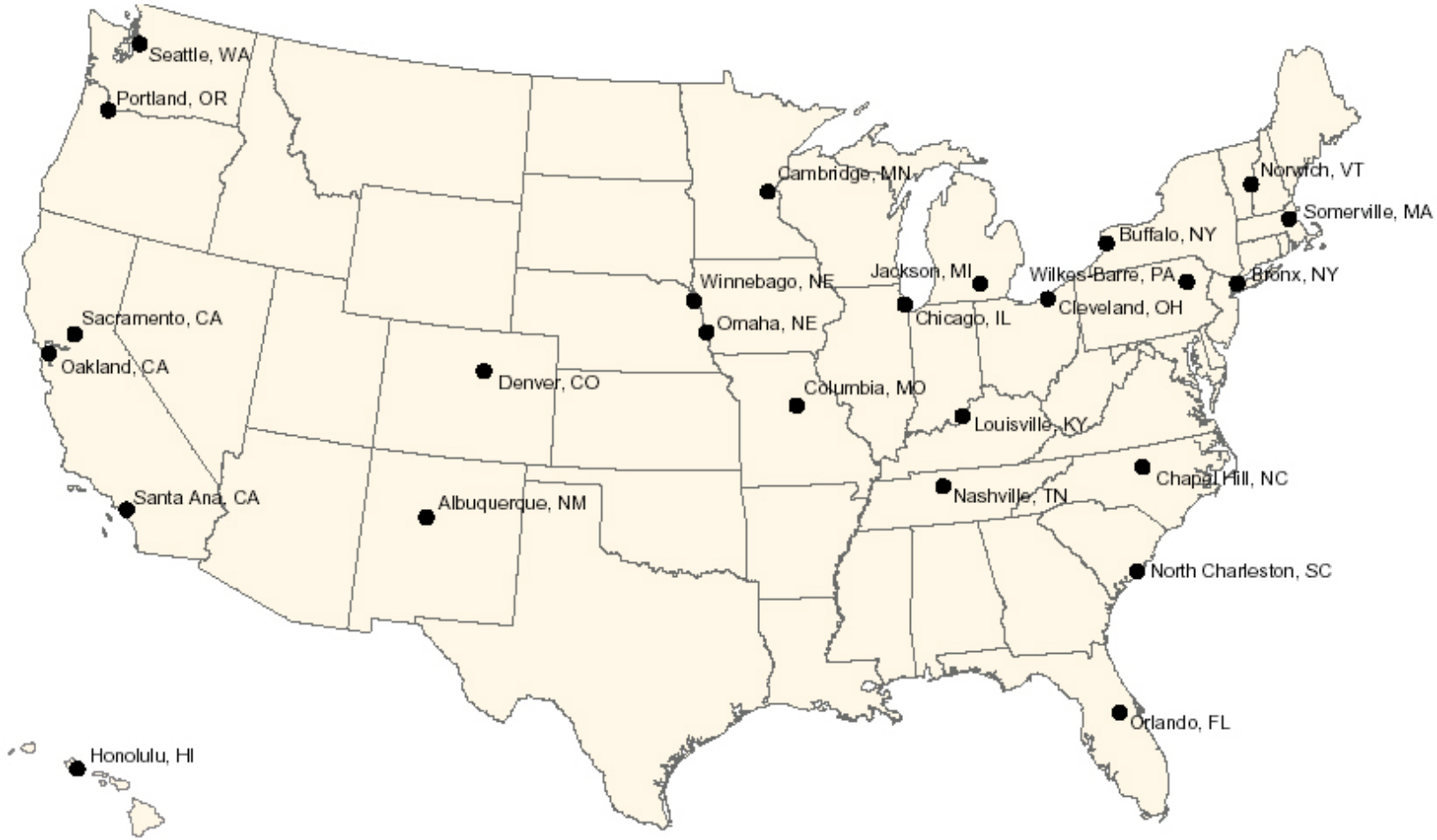
Creating Models

Active Living by Design Community Partnerships



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Columbia, MO
PedNet Coalition

- Youth-led Safe Routes to School
- Youth-led transit ridership initiative
- Promotion of city trail network
- Competitive community events

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Winnebago Reservation, NE
Ho-Chunk Community Development Corporation

- Mixed use village with active living features
- Trail master plan with bike/ped roadway improvements
- Walk/bike clubs
- Safety campaign and neighborhood watch
- Gardening programs




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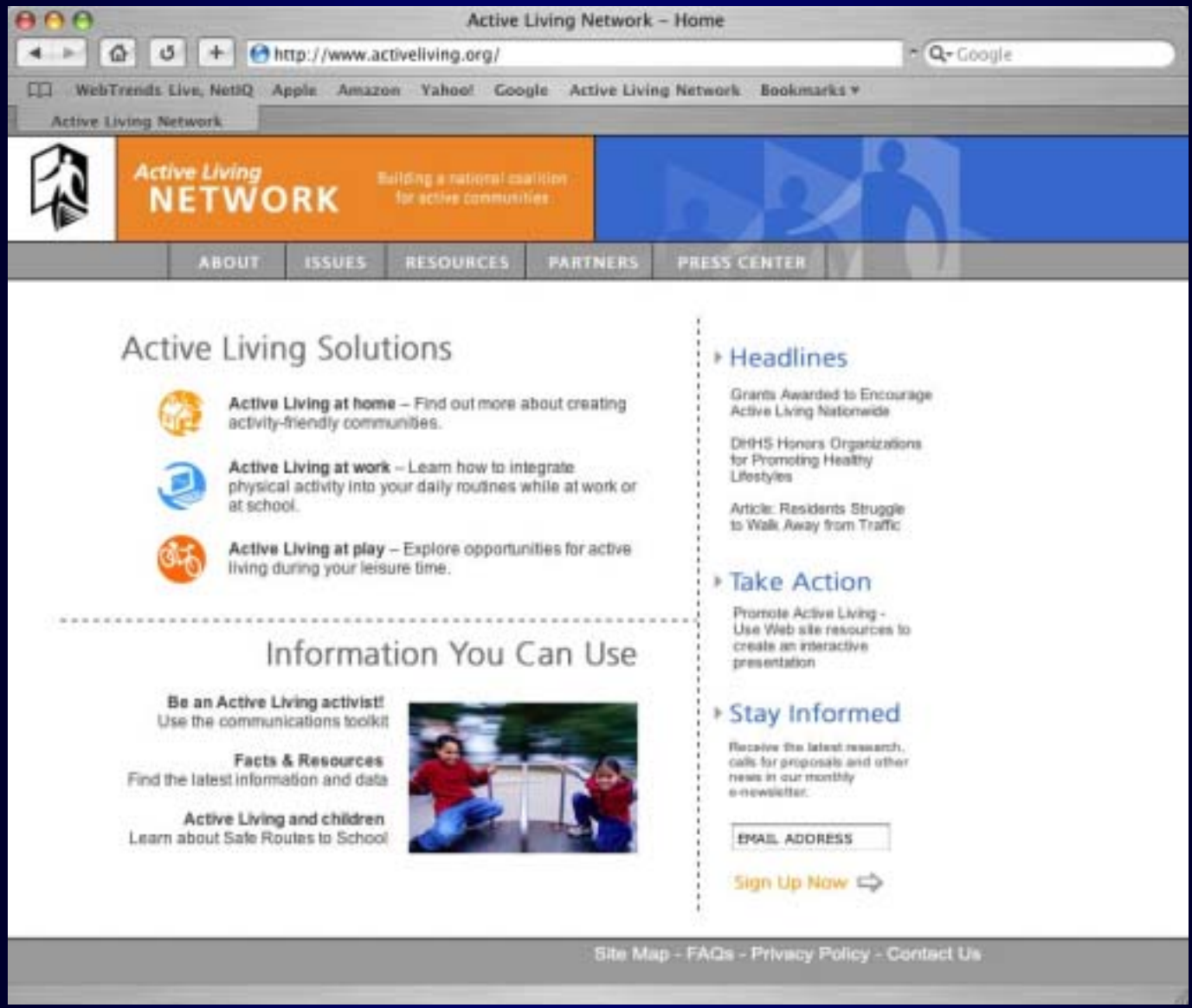

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Envisioning Change

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Architecture and the Nation's Health: Design Matters

- Broader view of contemporary design
- Opportunities in architecture standards
- New roles and partnerships

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